AVAL AVIATION SAFETY CENT NAVAL AIR STATION NORFOLK, VIRGINIA 23511

11/hs Ser 325 25 March 1968

SPECIAL HANDLING REQUIRED IAW OPNAVINST 3750.6 SERIES FOR OFFICIAL USE ONLY

From: Commander, Naval Aviation Safety Center

Commanding Officer, Heavy Attack Squadron ONE TWO THREE

VAH-123 AAR ser 1-67A concerning A-3B BuNo 138917 accident Subi:

occurring 5 April 1967, pilot PARKS

- 1. The subject report and all endorsements thereon have been reviewed. Commander, Naval Aviation Safety Center concurs with the comments and recommendations of the Aircraft Accident Board as modified by subsequent endorsers.
- 2. The cause of this accident has been recorded at the NAVAVNSAFECEN as UNDETERMINED with MATERIAL FAILURE (undetermined component of engine) and PILOT (emergency or unusual situation developed which placed pilot beyond limits of his experience level) as probable contributing factors.

By direction

Copy to: NAVAIRSYSCOMHQ (AIR 404) (2) COMNAVAIRPAC COMFAIRWHIDBEY COMRCVW-12 NAVPLANTREPO LONG BEACH

NAVAL AVIATION SAFETY CENTER NAVAL AIR STATION NORFOLK, VIRGINIA 23511

Code 62/Pn 20 June 1967

SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH OPNAVINST 3750.6E

FOR OFFICIAL USE ONLY

NAVAVNSAFECEN INVESTIGATION 54-67

- Ref: (a) NAVAIRREWORKFAC NORIS 282356Z April 1967
 - (b) NAVAIRREWORKFAC Alameda 191918Z April 1967
 - (c) NAVAIRREWORKFAC Alameda 270102Z April 1967
 - (d) NAVAIRREWORKFAC NORIS 220118Z April 1967
 - (e) NAVAIRREWORKFAC Norfolk 042204Z May 1967

1. INTRODUCTION

- a. The Accident. A-3B, BUNO 138917, assigned to HEAVY ATTACK SOUADRON ONE TWO THREE (VAH-123) and piloted by LCDR Richard Earl PARKS, USN, (b) (6) (b) crashed (ALFA) on a snow covered mountain at the 7000-foot level, at 1432(U), 5 April 1967, eight miles southeast of Alturas, California. The four occupants of the aircraft sustained fatal injuries in the crash. The crash site was in a U. S. Forest Preserve, and property damage was limited to broken trees.
- b. Synopsis of Flight. The aircraft was enroute from NAS Miramar to NAS Whidbey Island on an instrument flight plan at Flight Level (FL) 180. Flight Level 220 had been requested, but was not available. The weather in the area was cumulus buildups with tops at FL 200. The assigned altitude, therefore, placed the aircraft in the clouds for at least some of the time. Moderate to occasionally severe turbulence was reported in the buildups. The aircraft was directed to change frequencies for hand-off from Oakland Center to Seattle Center, but no contact was made with Seattle Center. Radar contact was lost in the vicinity of Alturas, California, and search was initiated. The crash site was located by Forest Rangers.

INVESTIGATION AND ANALYSIS

a. History

(1) Pilot. LCDR PARKS had 2821 total flight hours. He was a student replacement pilot in VAH-123 and had 25 hours in the A-3. The flight had been scheduled as an instrument check as a part of the syllabus training. He had 3.6 hours of instrument flight in the A-3 prior to departure from NAS

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Enclosure (1)

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Whidbey Island the previous day. His previous experience was primarily in A-lH aircraft. His jet experience consisted of 72 hours. He held a special instrument rating and was considered well qualified for this flight.

- (2) Instructor Pilot. LCDR Donald Edwin KING, USN, (b) (6) had 4209 total flight hours of which 1786 hours were in jet aircraft and 833 hours in the A-3.
- (3) Plane Captain. Carl Virgil MILLER, ADJ3, USN, (b) (6) was a well qualified crewman with about 1100 hours in the A-3. He was probably in the fourth seat as it is the procedure for the plane captain to secure the hatch prior to taxiing.
- (4) Passenger. LCDR James Merritt READER, USN, (b) (6) was a passenger enroute to NAS Whidbey Island for duty. His log books were aboard the aircraft and were not recovered. He was probably in the third crew position.
- (5) Aircraft. BUNO 138917 was accepted on 28 December 1956 and had accumulated 3749 total hours. The sixth PAR was completed in October 1966 and 440 hours were subsequently flown. A calendar ODD inspection was completed on 19 January 1967 and 246 hours were since flown.

(6) Engines

- (a) J57-P-10, serial number P607625, had accumulated 2435 hours since acceptance. The fourth overhaul was completed on 9 July 1966 at NAS North Island and the engine had since operated 440 hours. A calendar ODD inspection was completed on 19 January 1967 and the engine had since operated 246 hours. J57 Engine Bulletin 535-Al was reported by reference (a) to have been incorporated in February 1964 and verified during the last overhaul. This engine was installed on the port side.
- (b) J57-P-10, serial number 632289, had accumulated 2076 hours since acceptance. The third overhaul was completed on 11 July 1966 at NAS North Island and the engine had since operated 440 hours. A calendar ODD inspection was completed on 19 January 1967 and the engine had since operated 246 hours. J57 Engine Bulletin 535-Al was reported by reference (a) to have been incorporated in September 1965 and verified during the last overhaul. The engine was installed on the starboard side.
- (7) Weather. The nearest weather reporting station was Klamath Falls, Oregon. At 1400 (U) the reported weather was 3000-foot ceiling with

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NAVAVNSAFECEN INVESTIGATION 54-67

light snow showers, temperature 40 degrees F, dewpoint 25 degrees F, with lowering ceilings. Cumulus buildups were to FL 200. The aeronautical weather at Alturas, California, nearby the crash site is unknown; however, persons on the ground recall the clouds to be well below the mountain peaks with occasional snow.

b. Field Investigation. The field investigation was hampered by a four-foot accumulation of snow. The location of parts was not practicable beyond the immediate impact area. The physical removal of heavy components required prodigious effort; and, upon removal of the engines, further salvage operations were postponed until the snow melted. Certain smaller engine accessories and airframe components were located and carried out by hand. Parts removed from the mountain were flown to the designated overhaul points for failure analysis.

c. Failure Analysis

- (1) The airframe components were examined by NAVAIRREWORKFAC Alameda and the report of the analysis is reference (b) and amplified by reference (c). Pertinent findings of these analyses are:
 - (a) Both air turbine motors (ATM) were turning at impact.
- (b) Aileron boost and surface control hydraulic pump, P/N AA 65319R6, showed no evidence of seizure.
- (c) The remote attitude indicator (VGI) had the sphere distorted such that it appeared the impact attitude of the aircraft was vertical and tail down. While no correlation is suggested, it should be noted that a typical unit with power removed would assume the orientation observed in the damaged unit.
- (d) One DC generator had indications of stationary axial impact. No evidence of rotation at impact was found on the armature.
 - (e) Wing fuel boost pump was running at impact.
- (f) The emergency escape chute had not been fired. One recovered cartridge was tested and it fired within voltage and current limits.
- (2) The engines and accessories were examined by NAVAIRREWORKFAC North Island, and the report of the priority disassembly inspection (PDIR)

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is reference (d). The port engine was concluded to be stopped or at low RPM at impact. The starboard engine was rotating at impact. No indication of malfunction was found in the engine accessories. The engines were incomplete as recovered. The first, second, third, fifteenth stages of the port engine compressor were missing; with the fourth and sixteenth stages unattached. The first five spacers from the Nl compressor were missing. The first and second stages of the starboard engine were missing; with the third, fourth, and sixteenth stages unattached. The first, second, and fourth spacers from the Nl compressor were missing.

Other Investigation and Analysis

- (1) NORAD radar was tracking BUNO 138917 along his route of flight. The computer readout indicated a ground speed of 443 knots and a steady track of 340°, along J-5 airway. At 1431.9(U) the readout suddenly changed to 396 knots and 327° track. Very shortly thereafter the radar return disappeared. The geographic plot of the point of lost radar contact by NORAD was 5 to 7 miles further along the track than the Seattle Center radar (located at Klamath Falls). The variation could be an indication of an electrical power loss causing the IFF to become inoperative and cause the center radar contact loss prior to the loss of the radar return by the NORAD radar. The speed loss and the course deviation were duplicated by a pilot of VAH-123 by an intentional sudden power reduction on one engine. The maneuver also resulted in a severe yaw which caused considerable control problems from which the pilot was able to recover under the existing VFR conditions.
- (2) The combination of left course deviation observed by NORAD radar and the stopped or low RPM condition of the port engine led to concern about the possibility of failure or seizure of the port engine. During the course of the investigation, another mishap occurred in a VAH-10 aircraft, in the Caribbean area, which was operationally similar to the hypothesis formulated in this accident. This second mishap did not result in a crash. Two crewmen had bailed out while the aircraft was out of control. Upon reaching a low altitude the pilot successfully regained control and landed the aircraft. The starboard engine was found to have suffered severe damage in the compressor area and had extensive damage to the engine pod nose cowl. A PDIR was performed at NAVAIRREWORKFAC, Norfolk. Reference (e) is the report of this investigation and cites the cause of the engine failure to have been the use of the old type second stage compressor rotor two-rail spacer, P/N 206973, rather than the currently required three-rail spacer, P/N 366490. The engine log book indicated that J57 Engine Bulletin 535-Al (new spacer) had been incorporated. As noted in 2c(2) above, this spacer has not been recovered from the crash site.

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NAVAVNSAFECEN INVESTIGATION 54-67

CONCLUSIONS

- a. The cause of this accident is undetermined.
- b. The possible cause is a loss of flight control due to severe yaw brought about by a failure of the port engine. An electrical power failure and temporary loss of hydraulic systems may have resulted from a pilot reaction to reduce power on the remaining starboard engine, causing the ATM's to fall below operating RPM. Such conditions in an instrument flight situation would render the aircraft uncontrollable due to the tumbled VGI, asymmetrical thrust, and limited hydraulic flight control. If, as in the VAH-10 mishap, the engine failure also caused compressor case and nose cowl damage, an undetermined but severe amount of asymmetrical drag would be experienced causing further control difficulty.
- 4. RECOMMENDATION. None, pending further salvage efforts which are planned when snow conditions permit.

Distribution: List A CNO (Op-05F)

NO ... 'egative report is required.

2. Positive comments will be in a format suitable for inclusion in its "close out" letter.

Attack additional sheets if more space is required.

M&M DEPT:

To BOARds CONCLUSIONS AND RECOMMENDATIONS ARE EASED ON MEASER FRETERE INFORMATION AND MUCH PENSECTURE. THE DRIMARY CAUSE OF THIS ACCIDENT WILL REMAIN ENDETERMINED INTIL SUCH TIME AS Add TIONAL INFORMATION MAY BE GLEANED FROM FURTHER INVESTIGATION, AS ALLITIONAL CONTROLENTS MAY BE RECOVERED

476 221C

AERO-MED DEPT:

The NAVAIRSYSCOM is having a study conducted to determine the feaseability of installing the YANICEE extraction system in the A3 type aircraft.

Concer with enclusions or recommendations of AAR >

INITIAL/CODE

AIR-4041:WH

SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH OPNAVINST 3750 & SERIES

FIFTH MINORSEMENT on VAH-123 AAR ser 1-67A concerning A-3B DuNo 138917 accident occurring 5 April 196, pilot PARKB

From: Commander, Naval Mir Systems Command

To: Commander, U. S. Naval Aviation Safety Center

Subj: Aircraft Accident Report

1. Forwarded.

2. The A-3 YANKEE Extraction tests have been basically completed by the contractor. It has been determined that the installation of the YANKEE Extraction system in the A-3 aircraft is technically feasible. Final determination on the requirement, priority and funding for the installation of the YANKEE Extraction system in the A-3 aircraft will be made by the Chief of Naval Operations.

A. T. PIMENTEL,

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3750 Ser 80/ 3397

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SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH OPNAVINST 3750.6 SERIES

FOURTH ENDORSEMENT on VAH-123 AAR ser 1-67A concerning A-3B BuNo 138917 accident occurring 5 April 1967, pilot PARKS

From: Commander Naval Air Force, U.S. Pacific Fleet To: Commander, U.S. Naval Aviation Safety Center Via: Commander, Naval Air Systems Command

Subj: VAH-123 AAR ser 1-67A

Ref: (a) OPNAVINST 3750.6E

- 1. Readdressed and forwarded for NAVAIRSYSCOMIQ comments concerning the recommendation contained in Part X concerning installation of the YANKEE Extraction system in A-3B aircraft.
- 2. The conclusions and recommendations of the Aircraft Accident Board, as modified by the remarks contained in subsequent endorsements, are concurred with.
- 3. The first endorsement does not show complete copy to distribution. By copy of this endorsement, the Commanding Officer, VAH-123 is requested to ensure complete copy to distribution in accordance with subparagraph 48h of reference (a).

V. R. HUBLER By direction

Copy to: NAVAIRSYSCOMHQ COMMAVAVNSAFÉCEN (2) COMMEADATKCARAIRWING 12 COMFAIKWHIDBEY NAVPLANTREPO LBEACH CO HATRON 123

Code 015-ce 3750 Ser: 678

2 JUN 1967

SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH OPNAVINST 3750.6 SERIES

THIRD ENDORSEMENT on VAH-123 AAR Ser 1-67 of 5 April 1967, A-3B BUNG 138917, Pilot PARKS

From: Commander Fleet Air, Whidbey

To: Commander, U. S. Naval Aviation Safety Center Via: Commander Naval Air Force, U. S. Pacific Fleet

Subj: Aircraft Accident Report; forwarding of

- Forwarded. Commander Fleet Air, Whidbey concurs in the comments and recommendations of the Board as modified by the first two endorsements, except as noted below.
- 2. Insufficient evidence exists to include pilot deviation from NATOPS procedures as a contributing cause factor. The starboard engine was operating near the idle range; however, the reason for this is a matter of conjecture.
- 3. Commander Fleet Air, Whidbey concurs in the need of an extraction system for A-3 crew members. The number of possible saves for Whidbey based aircraft are correctly stated in the second endorsement. These do not include combat losses.
- 4. Plans for further investigation at the crash site are being made. It is estimated that the snow will have receded enough by 1 July to permit access to the area.

J. Day

Copy to:
NAVAIRSYSCOMEQ
COMNAVAVNSAFECEN (2)
COMNAVAIRFAC
COMMETVW-12
NAVPLANTREP LBEACH
HATRON ONE TWO THREE

SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH OPNAVINST 3750.6 SERIES

COMPCVW-12:bd 3750 Ser 80/330 23 MAY 1967

SECOND ENDORSEMENT on VAH-123 ser 1-67 of 5 April 1967, A3B BUNG 138917 Pilot PARKS

From: Commander Readiness Attack Carrier Air Wing TWELVE

To: Commander, U. S. Naval Aviation Safety Center

Via: (1) Commander Fleet Mr, Whidbey

(2) Commander Naval Air Force, U. S. Pacific Fleet

Subj: Aircraft Accident Report; forwarding of

- Forwarded, concurring with the conclusions and recommendations of the board as modified by the remarks of the first endorser and with the following comments:
- a. Exception is taken to the unsubstantiated remarks made by the medical officer in paragraph VII A.3. in the conclusions of his report. A sew of the accident statistics for A3 aircraft reveals this is the thir. sident in 40 months in which an ejection system could have conceivably prevented fatal injuries. In one of these cases an ejection system with at least a "zero zero", capability would have been required. This is not to say that an ejection system for A3 aircraft is not an urgent requirement. This endorser certainly recognizes the need for an escape system for crew members of all high speed/high performance aircraft. However, it is the opinion of this endorser that conclusions, and recommendations must be made from, a basis of fact, and not from an emotional viewpoint.
- 2. It is noted that the instructor pilot for this flight had last completed the NATOPS Standardization Check on 8/14/64. Subsequent investigation reveals a sagging emphasis on this point in that two instructor pilots of VAH-123 are overdue for NATOPS qualification checks. It is further noted that a program, whereby each instructor is checked for NATOPS standardization in conjunction with his annual examination for preficency in instrument flying, has been initiated. By copy of this endorsement the Commanding Officer, Heavy Attack Squadron ONE TWO THREE is directed to insure the standardization of each instructor, in accordance with current directives at the earliest possible date.
- 3. It is further noted that section A.19. of the Aircraft Accident Report Form 3750-1 should be changed to reflect altitude 7200 feet above mean sea level and zero feet above termin.

R. E. GALLATIN

SPECIAL HANDLING PEQUIRED IN ACCORDANCE WITH OPNAVINST 3750.6 SERIES

Copy to:
CO, VAH-123
NAVAIRSYSCOMEQ
COMNAVAVNSAFECEN (2)
COMNAVAIRPAC
COMFAIRWHIDBEY
NAVPLANTREPO DALLAS

VAH-123/JPS·dwc 3750 Ser 00/868 1 2 MAY 1967

FIRST ENDORSEMENT on VALL-123 ser 1-67 of 5 April 1967 A3B BUNO 138917 Pilot PARKS

From: Commanding Officer Heavy Attack Squadron One Two Three To: Commander, Naval Aviation Safety Center

Vi (1) Commander Readiness Attack Carrier Air Wing Twelve

(2) Commander Fleet Air, Whidbey

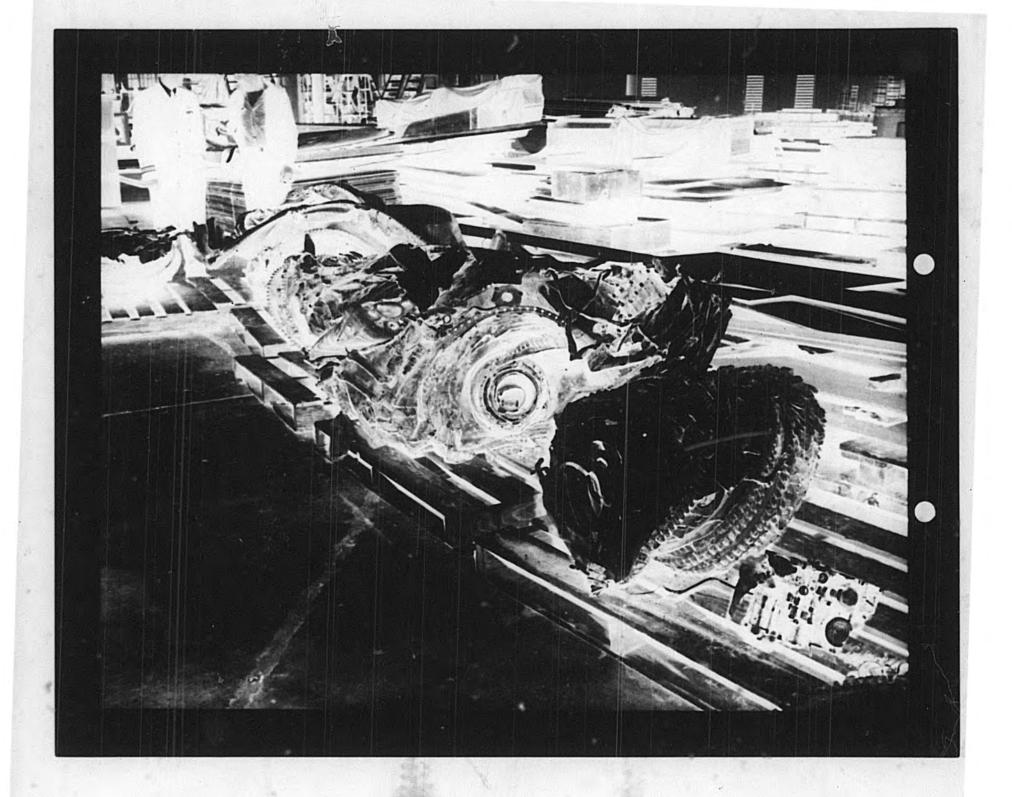
(3) Commander Naval Air Force, U. S. Pacific Fleet

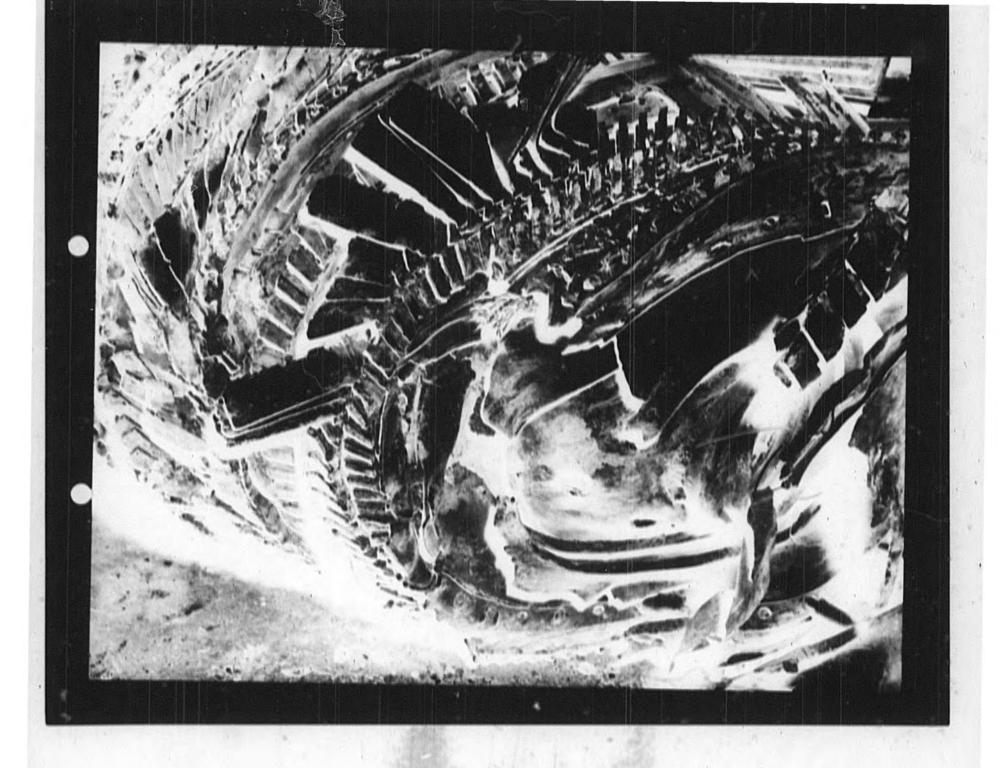
Subj . Aircraft Accident Report; forwarding of

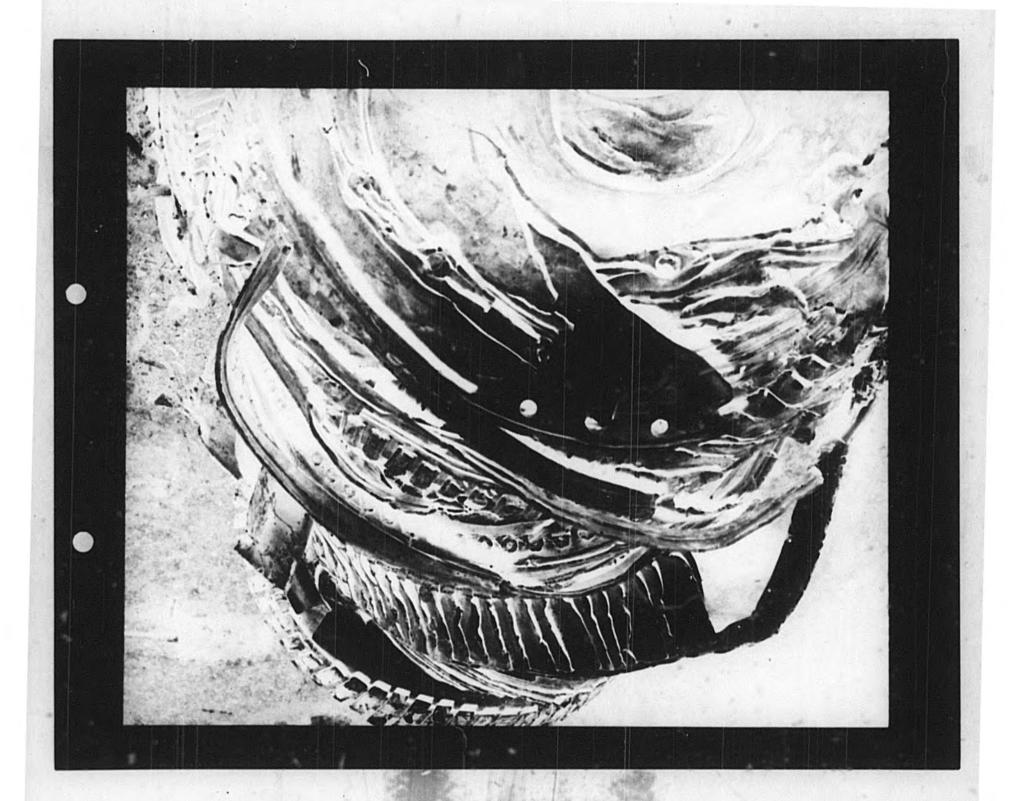
- 1. Forwarded concurring with the conclusions and recommendations of the board with the following exceptions:
- a. Concur. Although it cannot be determined why the crew made no effort to abandon the aircraft, it must be re-emphasized that bailout is the proper course of action when faced with an emergency at altitudes less than 10,000 feet above the terrain. This is the NATOPS procedure and is taught to all A-3 flight crews. It will be continually re-emphasized at all crew meetings.
- b. Do not concur. Flight crows must always be aware of the type of terrain below their aircraft. This information is available on other charts and its inclusion on the enroute PLIP charts would detract from what now is a highly useable inflight chart.
- c. Do not concur. No apparent attempt was made to abandon the aircraft using the installed emergency exit and it is not known if the VANKEE extraction system would have been used if installed in the aircraft. The age of the aircraft and its expected utilization during its remaining service life does not warrant the expenditure of large sums for the installation of new equipment.
 - d. Concur.
- e. Concur. All possible efforts will be made to recover further wreckage and ascertain additional facts concerning the accident. Any new developments will be forwarded when available.
- 2. The boards conclusions and recommendations are based on a meaner amount of factual evidence and much conjecture. The possibilities are almost limitless and the actual factors may never be determined. The port engine failure by itself would not cause the accident, but the action taken by the pilot or the instructor could have a revited the emergency.
- An examination of LCDR PARKS flight log shows that he had not been involved in a previous pilot caused accident.
- 4. The last COMNAVAIRPAC Accident Prevention Survey was completed on 30 March 1967

J. P. SUNDEERG

SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH OPMAVIORT 3750.6E











OPNAV FORM 3750-14 (Rev. 3 63) Page 2 Para 66, OPNAV INSTRUCTION 3750 5, effective coliner PART II MAINTENANCE MATERIAL AND FACILITIES DATA 4 MONTHS 5 FLT HIS 5 LAST/PAR SINCE LAST SINCE LAST OVERHAUL FAR OVERHAUL PAR/OVERHAUL ACTIVITY 2. FLIGHT HRS SINCE ACCEPTANCE DAYS THE OF FLIGHT HOURS DATE OF HANGE WITURE NO OF LAST CHECK PERFORMED LAST CHECK LAST CHECK 28 Dec 56 439.7 ALASEDA CAL. ODD 3748.9 79 ENTINE CERIAL MUMBER 3 FLIGHT 4. HRS SINCE NUMBER OF ACCEPTANCE EVERHAULS S WAS DIR SINCE LAST OVERHAUL MEQUESTELY OVERHAUL ACTIVITY FLIGHT HOURS SINCE LAST CHECK DEAYS SHICE LAST CHECK TYPE OF LAST CHECK FERFORMED (i) J-57 P607 ILS 2134.7 P-10 625 YES 439.7 NORIS CAL ODD 246.3 79 D-57 P632 NAS 2076.1 P-10 289 YES 439-7 NOUTS CAL, ODD I 79 TOTAL HES NO OF SINCE LAST WAS DIR REQUESTED! MANUFACTURERS CHEFHAUL SER NO. INVOLVED NOMENCLATURE PART NUMBER ACTIVITY FUR/AMPEUR ATM NAS 51.3.6 78P_247 352040-0-4 1746 2 YES NAS ATM PX 44, 175 352030 0 2 453.7 ALAMEDA YES 65 PARTS REPAIRED PARTS REPLACED 3 DIRECT MANHOURS INVOLVED NOMENGLATURE PART NUMBER PART NUMBER NGMENCLATURE JET ENGINE FLAMSOUT (Include intentional securing to prevent engine damage) I M TITUDE 4 EGT 5. MANEUNEH AT TIME OF 6 FUEL FLOW 7 ATTITUUE AT THE OF LEVEL FLT FLAMEOUT 18.0001 360K EST UNK UNK LEVEL " G FORCES 9 RELIGHT 12 MAX EUT 13. FUEL DUNTROL TE NO RELIGHT 10 ALTITUDE 11 MS ATTEMPTS ATTEMPTED ACCOMPLISHED FRIMUST MANGAL INTENTIONAL IS ENGINE SYMPTOMS 16 CAUSE OF SYMPTOMS LINK UNKNOWN INKNOWN RECIPROCATING ENGINE FAILURE 23 FUEL FLOW 24 OIL PRESSURE 19 ATTITUDE 20 HPM 21 MAP 22 TOPQUE/BMEP INTENTIONAL 25 ENGINE SYMPTOMS 26 CAUSE OF SYMITOMS IDENTIFY OTHER MEPORTS CONCERNING THIS MISHAP 1. AMPPUR SEBINL HUMBER_ 2 DIR MESSAGE REQUEST DATE TIME-GROUP_VAH-123 11034.57 hafe MANC on DEP require. See pure. ME CPNAYTHIST POTENTE 1. OTHER

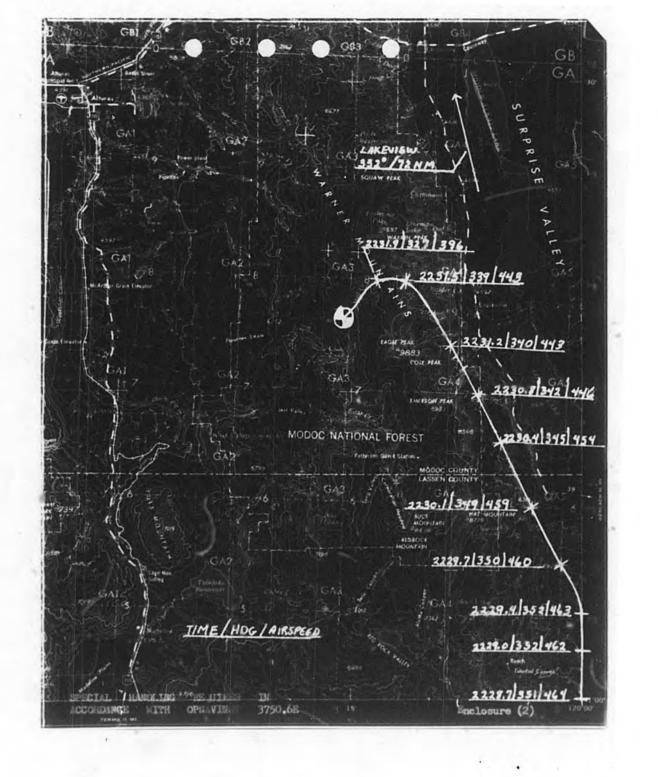
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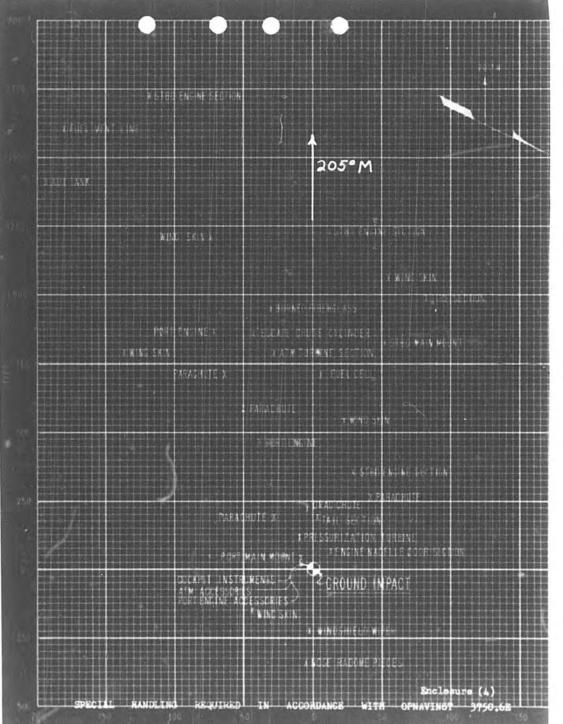
THE ACCIDENT

On 5 April A3B BUNO 138917, NJ309, departed NAS Miramar at 1316 local for NAS Whidbey Island via Bakersfield, J-5 Seattle direct NAS Whidbey at flight level 220, airspeed 450 knots TAS. The flight progressed normally, deviating from filed flight level to 180. At 1428 approximately 95 nautical miles SSE of Lakeview VORTAC Oakland Center advised 138917 to contact Seattle Center on frequency 306.3 MCS. This transmission was acknowledged with no statement of difficulty. At 1430 the aircraft reported at flight level 180 to Seattle Center but did not acknowledge when subsequently requested to SQUAWK IDENT. At 1431 Seattle Center observed the aircraft make an abrupt left deviation from flight track and disappear from radar at 41 - 27N, 120 - 15W.

Agencies concerned were alerted at this time and at 1630 search and rescue attempts were initiated by Air Rescue Center at Hamilton AFB. At approximately 1430 a witness 8 miles from the scene heard an explosion and observed smoke. He subsequently notified the MODOC county sheriff in Alturas, California. Search and rescue aircraft maintained a vigil over the scene throughout the remainder of the day and all during the night. Search efforts were hampered by dense cloud cover and restricted visibility in show showers. The following morning. . 6 April 1967, the MODOC county sheriff in a light civil aircraft visually spotted the wreckage at 41° - 17'N, 120° - 16'W. The wreckage was located on the western side of the Warner Mountain range at 7400' level amidst a forested area with snow depths approximately 4 - 6 feet (see enclosure 2). Coincidentally, a ground party of two U. S. Forest Rangers assigned to the Modoc National Forest reached the scene via snow tractor and established that there were no survivors at the wreckage site. A navy flight surgeon, dropped by helo later during the day, verified that there were no survivors at the crash scene. On 8 April the navy aircraft accident investigative team from V.H-123 established that all four occupants had remained with the aircraft and further search efforts terminated. Rescue report, OPN..V form 3750-13 is contained as enclosure (3).

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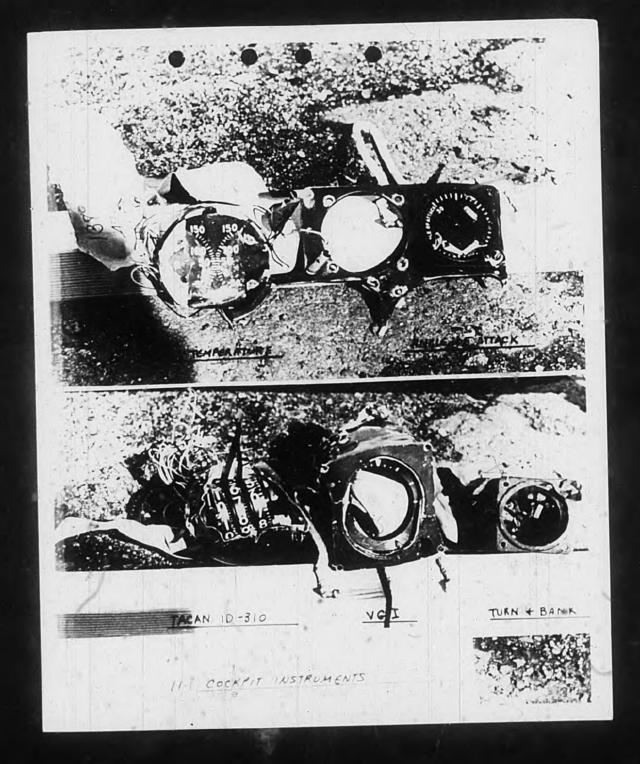
PROJECTED FLIGHT PATH TO IMPACT POINT

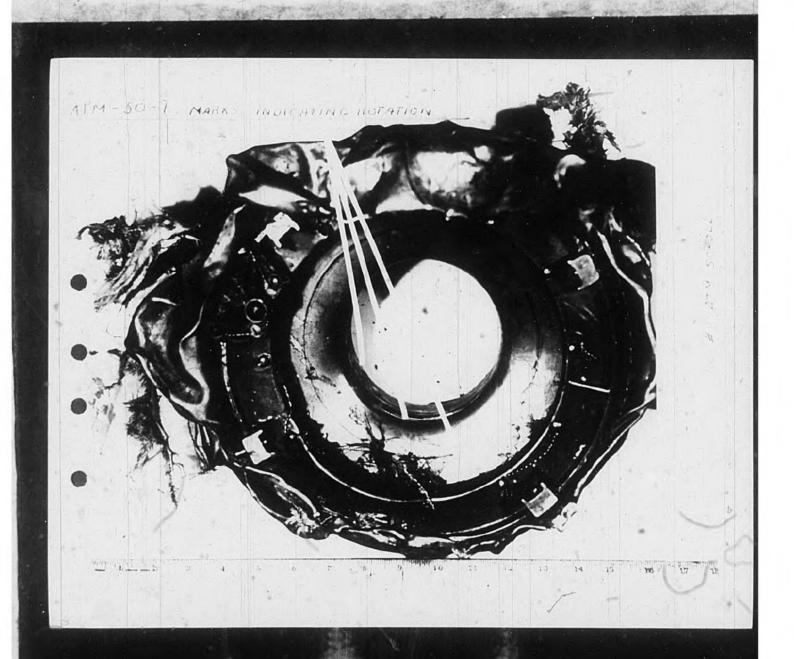


AIRCRAFT ENTRY ANGLE INTO IMPACT AREA









AT M 50-10

11-3 # 2 ATM SCROVI

